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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/987,650	11/15/2001	Fumiaki Miyamaru	Q66488	7449

7590

05/14/2004

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Washington, DC 20037-3213

EXAMINER
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ROJAS, OMAR R

ART UNIT	PAPER NUMBER
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2874

DATE MAILED: 05/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/987,650

Applicant(s)

MIYAMARU ET AL.

Examiner

Omar, Rojas

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 10-18 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9 and 22 is/are allowed.
- 6) ☒ Claim(s) 1-8, 19-21, 23-25 and 28-30 is/are rejected.
- 7) ☒ Claim(s) 26 and 27 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

1. With regards to the Request for Continued Examination filed on April 14, 2004, all the requested changes and/or additions to the claims have been entered.

### ***Response to Arguments***

2. Applicant's arguments with respect to claims 1-9 and 19-30 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Objections***

3. Claim 21 is objected to because of the following informalities: In line 11 of claim 21, the use of the term "the light adjustment member" appears to grammatically incorrect. The examiner suggests pluralizing the word "member." Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. **Claims 1-6, 19-21, 25, and 28-30 are rejected under 35 U.S.C. 102(b) as being anticipated by 5,367,584 to Ghezzi et al. (hereinafter "Ghezzi").**

As seen in his Figures 2a-2b and Figures 4a-4b, Ghezzi discloses all the specified limitations including an optical modulator comprising:

an optical waveguide (3, 3a, 11, 11a) having a first end and a second end; a plurality of flexible light transmitting members (6, 26); a gap (8) between the light transmitting members and waveguide; and a modulation device that controls the light transmitting members (6, 26) by bringing the light transmitting member into and out of contact with the optical waveguide (3, 3a, 11, 11a). Note that it is inherent within Ghezzi to provide a light source which emits light directly into a first end surface of the optical waveguide. Note that it would also be inherent in Ghezzi that a light receiving structure would be disposed adjacent the second end of the waveguide in order to use the non-switched light emitted from the waveguide. See also Ghezzi at column 5, lines 34-69; column 7, lines 7-27; and column 8, lines 4-33.

**6. Claims 1-2, 4-8, 19-21, and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,953,469 to Zhou.**

As seen in his Figures 2,3, 6c, and 15, Ghezzi discloses all the specified limitations including an optical modulator comprising:  
an optical waveguide (20) having a first end and a second end; a plurality of flexible light transmitting members (Figure 6c, 30); a gap (34) between the light transmitting members (30) and waveguide; and a modulation device that controls the light transmitting members (30) by bringing the light transmitting member into and out of contact with the optical waveguide (20). Note the light source (60) emits light directly into a first end surface of the optical waveguide (20). Note lens (61) as seen in Fig. 3. Note the imaging optical system disclosed in Fig. 15 which focuses light emitted from

the optical waveguide (20) at a predetermined position. See also Zhou at column 6, lines 11-45; column 7, lines 38-49; and column 10, lines 56-67.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. **Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ghezzi as applied to claim 4 above.**

Regarding claim 7, the previous remarks concerning Ghezzi and claim 4 are incorporated herein. Thus, Ghezzi only differs from claim 7 in that Ghezzi does not expressly recite using a lens between the light source and the light incidence side of his optical waveguide. However, it is well known in the art to use a lens to help focus light from a light source to an optical waveguide. Therefore, it would have been obvious to

one of ordinary skill in the art at the time of the claimed invention to obtain the invention specified by claim 7 by simply providing a lens in Ghezso to focus light from the light source to the optical waveguide.

**10. Claims 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ghezso as applied to claim 19 above.**

Regarding claims 23-24, the previous remarks concerning Ghezso and claim 19 are incorporated herein. Thus, Ghezso only differs from claims 23-24 in that Ghezso does not disclose that each light transmitting member (e.g., reference numeral 6) have edges aligned with the second end surface of the waveguide(s) (e.g., reference numeral 3). However, the applicant(s) have not disclosed a perceived criticality for the claimed features. Furthermore, aligning the edge of the light transmitting members in Ghezso (e.g., reference numeral 6 as seen in Figs. 2a-2b) to align with the second end surface of the waveguide(s) would simply be a matter of changing the length or position of the light transmitting member. Changes in size or location of parts without more have been held as obvious design choices. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to obtain the invention specified by claims 23-24.

***Allowable Subject Matter***

11. Claims 9 and 22 are allowed.
12. Claims 26 and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

13. The following is a statement of reasons for the indication of allowable subject matter: Regarding claims 9 and 22, neither the Ghezzi or Zhou reference appears to disclose or suggest, nor does it appear to have been obvious to provide, a scanning device for relatively moving a photosensitive material and an exposure head as specified in claims 9 and 22. Regarding claims 26 and 27, neither the Ghezzi or Zhou reference appears to disclose or suggest, nor does it appear to have been obvious to provide, using the light emitted from the second end surface of the optical waveguide in the specified manner.

### **Conclusion**

Since the Zhou references was provided with a previous Office action, no copy thereof is being provided with the instant Office action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Omar Rojas whose telephone number is (571) 272-2357 and whose e-mail address is *omar.rojas@uspto.gov*. The examiner can normally be reached on Monday-Friday (7:00AM-3:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hemang Sanghavi, can be reached on (571) 272-2358. The official facsimile number for regular and After Final communications is (703) 872-9306. The examiner's RightFAX number is (571) 273-2357.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

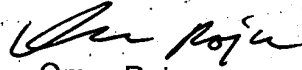
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Omar Rojas  
Patent Examiner  
Art Unit 2874

or  
May 10, 2004



HEMANG SANGHAVI  
PRIMARY EXAMINER